

# Airblast AFC Is On the Right Track

**AIRBLAST AFC** has completed work on a \$1.4 million project for a large rail group in Ohio, USA, which repairs, sells, manages, and leases a fleet of almost 23,000 various types of railcars and locomotives. Airblast AFC is a joint venture between Airblast Ltd and AFC Finishing Systems (AFC) who has been manufacturing paint spray booths, air make-up units, powder coating equipment and related equipment throughout North America since 1967.

The new facility includes a blast booth, paint booth and drying booth for the maintenance of the railcars. The three booths are all approximately the same size at 25 ft. wide by 90 ft. long, allowing plenty of space for the larger railcars. The new facility features four blast machines which allow up to four operators to work on a job and personnel lifts to ensure the safety and comfort of the workers.

Without a doubt, the most exciting feature of this installation is its innovative Airflex Recovery Floor for the automatic recovery of abrasive materials throughout blast booths. The Airflex Floor is made of modular “flexible” scraper corridors of six standard widths that can be produced to practically any length, giving enormous flexibility to recover from virtually any floor area. Unlike many other abrasive recovery systems where civil engineering costs and/or power consumption often dictate only partial floor coverage, the Airflex Recovery Floor utilizes 100 percent of the floor space meaning that operators do not have to waste any time manually recovering abrasive.

The system, regularly deployed at existing factory floor level when a short step into the booth is acceptable, requires less than 6" deep ground works to achieve a full recovery floor flush to the existing factory floor. Its other great advantage is minimal power consumption. In this case, the entire floor measuring 25 ft. wide x 90 ft. long with four blasters working at up to 150 psi, ran on only 12 hp.

The project began in February 2013 amid freezing temperatures and heavy snow fall. The Airblast AFC team began work on the booths, even though it meant working outside in sub-zero temperatures, and the project was completed within 11 weeks. With the success of this project, Airblast AFC has high hopes that they will be able to provide more services for the rail industry in the future.

To find out how Airblast AFC could fulfil all your blasting and painting needs, give us a call at (800) 331-7744 or visit our website at [www.airblastafc.com](http://www.airblastafc.com)

## About Airblast AFC

Airblast AFC is a joint venture between AFC Finishing Systems (AFC) and Airblast Ltd (Airblast) in the United Kingdom. Airblast has been providing blast booths and related equipment throughout Europe for over 30 years. Their customer list is wide and varied from many diverse industries, including aerospace, automotive, rail and wind power. They have a proven track record in the engineering and design of quality blast equipment utilizing the latest available technology. AFC has been manufacturing paint spray booths, air make-up units, powder coating equipment, etc. since 1967. AFC and Airblast are proud to partner together in order to provide the manufacturing, sales, installation and support of Airblast engineered equipment throughout North America.



*The Airflex Blast Room Media Recovery System by Airblast AFC*

# Internal Shot Peening and Its Applications

**THE MAJOR APPLICATION** of shot peening is the improvement of fatigue characteristics, and applications like metal forming, straightening, improving resistance to stress corrosion, and testing the adhesion of plated deposits of silver on steel. Less known, but just as useful, is when shot peening is used to roughen the inside of a pipeline.

A good example is a pneumatic conveying system for the transportation of plastic pellets. Pneumatic conveyor tubing is usually made of stainless steel or aluminum alloy. It is used to transport plastic pellets at the facilities of molding companies or at various production, blending and distribution sites. The velocity of the pellets results in friction, heat and lost production. When these granulates get into contact with the smooth pipe wall, the friction pressure and

the increased temperatures may lead to a partial plastification of the granulates. As a result, there is first the formation of a film and then, subsequently, of fibers called “angel hair” in the pipes and the pipe elbows. The consequences are material loss, impurities and even a complete clogging of the pipelines. Angel hair accounts for millions of pounds of lost and/or contaminated production each year. The aim is therefore to avoid angel’s hair by a specific roughening of the surface.

When the inside of pipeline is roughened by shot peening, the polymer pellets bounce or roll instead of sliding along the inside of the pipe. The pellets’ contact with the side of the pipe is shortened and formation of angel hair is prevented. Shot peening of pipes has been found to be superior to other internal treatments of the tubing, and is often more economical. Plus, it can be applied on-site. The shot-peened finish has the added benefit of work hardening (when stainless or aluminum piping is used), thus extending the life of the surface treatment. Table One shows test results from six different internal pipe treatments. A lower value of fines per 100,000 lb conveyed is desirable. Shot peening resulted in one-third less fines than that of the next closest finish.

Internal shot peening is a proven application in the dairy/cheese, oil/gas, chemical and plastics industries.

**TABLE ONE**

Treatment	Fines (grams/100,000 lb conveyed)
Directional Shot Peened	1,629
Smooth Mill Finish	4,886
Spiral Groove Pipe	6,518
Sandblasted Pipe	7,145
Polyurethane Coated	7,215
Medium Scored Pipe	13,887

**Vikas Metals**

Vikas Metals is a pioneer in the internal shot peening industry. They specialize in internal shot peening for stainless steel, carbon steel and aluminum pipes, bends, tailor-made long radii elbows and pipe fittings, supplied per customer specifications. The Vikas teams are committed to achieve the most cost-effective shot peening job shop services. Their internal shot peened products are mainly supplied to the pneumatic conveying industry engaged in preparing conveying systems for the transportation of plastic pellets.

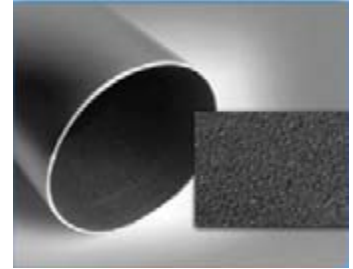
**Shot-Peened Pipes**

Vikas Metals’ innovative methods for the internal surface roughening of pipes prevents costly production failures due to angel’s hair. Their plant is equipped with automatically controlled shot peening machines for a wide range of components up to one meter in diameter. The finish is consistent and covers 100% of the internal surface of the pipe.

The overall quality of the pipeline system may be increased by special types of inner surfaces. The quantity and the quality of the granulated material as well as the kind and velocity of the transport require individual depths of roughness. Vikas Metals uses different techniques to achieve the defined degree of roughness of the inner pipe surfaces.

**Shot-Peened Elbows**

Elbows with long radii ensure a safe, clean and careful transport of products. An essential aspect of the pneumatic conveying technology is the fact that pipe elbows with long radii are used to



reduce the impact of granulates with the pipe elbow, thus avoiding possible damage to both the goods and the pipe walls. This means that the transport becomes safer and cleaner. Moreover, the demixing of the carrying air and of the goods due to the transport will be reduced. The homogenous conveying of the material avoids the formation of clogging and the resulting pressure losses.

Vikas Metals can supply elbows of any radii and of all required angles. The usual radius is 5 to 10 times the pipe diameter. Tangents, either at one end or at both ends, can be considered during production. The company offers tailor-made long radii pipe elbows, as per required radius and tangent, with smooth or especially roughened inner surfaces. Long radii elbows are available in stainless steel, carbon steel and aluminium.

For more information, call +91-9885977337 (ask for V.C. Chandan) or send email to [info@shotpeeningindia.com](mailto:info@shotpeeningindia.com).

- ▶ **Download the latest issue**
- ▶ **Get advertising rates**
- ▶ **Request a free subscription**
- ▶ **Read past issues**

**[www.theshotpeermagazine.com](http://www.theshotpeermagazine.com)**